

What is claimed is:

1. A mobile communication system having a function of delivering data of an identical service to a plurality of radio terminals,

5 wherein information for paging with respect to a radio terminal, which receives delivery of the service, is generated using identification information peculiar to the service.

2. The mobile communication system according to claim 1,

 wherein the information for paging includes a downlink
10 common channel, which sends a paging message, and a paging indicator channel, which accompanies the downlink common channel and sends information indicating presence or absence of an incoming call with respect to a radio terminal receiving delivery of the service, and

15 the information indicating presence or absence of an incoming call and transmission timing of the information are generated according to identification information peculiar to the service.

3. The mobile communication system according to claim 2,

20 wherein the identification information peculiar to the service is superimposed on an indication bit for a paging group (incoming call group) indicating presence or absence of a voice incoming call in the paging indicator channel.

4. The moving communication channel according to claim 1,

wherein the information peculiar to the service is notified to said radio terminal receiving the service, and said radio terminal receives the information for paging on the basis of the information peculiar to the service.

5 5. A radio network controller in a mobile communication system having a function of delivering data of an identical service to a plurality of radio terminals, comprising means for generating information for paging with respect to a radio terminal, which receives delivery of the service, by using identification
10 information peculiar to the service.

6. The radio network controller according to claim 5,
 wherein the information for paging includes a downlink common channel, which sends a paging message, and a paging indicator channel, which accompanies the downlink common channel
15 and sends information indicating presence or absence of an incoming call with respect to a radio terminal receiving delivery of the service, and

 said means generates the information indicating presence or absence of an incoming call and transmission timing of the
20 information according to identification information peculiar to the service.

7. The radio network controller according to claim 6,
 wherein the identification information peculiar to the service is superimposed on an indication bit for a paging group

(incoming call group) indicating presence or absence of a voice incoming call in the paging indicator channel.

8. The radio network controller according to claim 6,
wherein the information indicating presence or absence of
5 an incoming call (Paging Indicator: PI) is determined according
to the following expression:

$$PI = (DRXindex) \bmod (N_p),$$

$$DRXindex = (TMGI) \div (8192)$$

$$N_p = (18, 36, 72, 144)$$

- 10 TMGI = Temporary Mobile Group Identify (the
identification information peculiar to the service).

9. The radio network controller according to claim 6,
wherein the transmission timing (Paging Occasion: PO) is
determined according to the following expression:

15
$$PO = [\{ (TMGI) \div (K) \} \bmod \{ (DRX \text{ cycle length}) \div (PBP) \}]$$

$$* PBP + n * (DRX \text{ cycle length}) + \text{Frame Offset},$$

TMGI = Temporary Mobile Group Identify (the
identification information peculiar to the service)

K: the number of existing paging channels,

- 20 DRX (Discontinuous Reception) cycle length: a period
for receiving the paging indicator channel,

PBP: Paging Block Periodicity,

n: an integer including zero (up to a maximum number
of an SFN (Serial Frame Number)).

10. A operation control method for a radio network controller in a mobile communication system having a function of delivering data of an identical service to a plurality of radio terminals, comprising a step of generating information for paging with
5 respect to a radio terminal, which receives delivery of the service, using identification information peculiar to the service.

11. The operation control method according to claim 10,
wherein the information for paging includes a downlink common channel, which sends a paging message, and a paging
10 indicator channel, which accompanies the downlink common channel and sends information indicating presence or absence of an incoming call with respect to a radio terminal receiving delivery of the service, and

said step generates the information indicating presence
15 or absence of an incoming call and transmission timing of the information according to identification information peculiar to the service.

12. The operation control method according to claim 11,
wherein the identification information peculiar to the
20 service is superimposed on an indication bit for a paging group (incoming call group) indicating presence or absence of a voice incoming call in the paging indicator channel.

13. The operation control method according to claim 11,

wherein the information indicating presence or absence of an incoming call (Paging Indicator: PI) is determined according to the following expression:

$$PI = (DRXindex) \bmod (N_p),$$

5 $DRXindex = (TMGI) \div (8192)$

$$N_p = (18, 36, 72, 144)$$

TMGI = Temporary Mobile Group Identify (the identification information peculiar to the service).

14. The operation control method according to claim 11,
10 wherein the transmission timing (Paging Occasion: PO) is determined according to the following expression:

$$PO = [\{ (TMGI) \div (K) \} \bmod \{ (DRX \text{ cycle length}) \div (PBP) \}]$$

$$* PBP + n * (DRX \text{ cycle length}) + \text{Frame Offset},$$

15 TMGI = Temporary Mobile Group Identify (the identification information peculiar to the service)

K: the number of existing paging channels,

DRX (Discontinuous Reception) cycle length: a period for receiving the paging indicator channel,

PBP: Paging Block Periodicity,

20 n: an integer including zero (up to a maximum number of an SFN (Serial Frame Number)).

15. A radio terminal in a mobile communication system having a function of delivering data of an identical service to a plurality of users,

25 wherein identification information peculiar to the service is received from a network side at the time when said radio terminal

joins the service, and information for paging is received on the basis of the identification information.

16. A program for causing a computer to execute an operation control method for a radio network controller in a mobile communication system having a function of delivering data of an identical service to a plurality of radio terminals, comprising a step of generating information for paging with respect to a radio terminal, which receives delivery of the service, using identification information peculiar to the service.